

TIER I OPERATING PERMIT APPLICATION

**Spunstrand, Incorporated
Wallace, Idaho**

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Vice President of Manufacturing
Spunstrand, Incorporated
60662 Northside Frontage Road
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Wallace, Idaho 83873
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Prepared By: Spidell and Associates, Ltd. Co.
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January 6, 2003

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NARRATIVE

Spunstrand, Incorporated has operated at 60662 Northside Frontage Road since 1961. The company makes fiberglass reinforced duct work, pipes tubing and tanks. using the filament winding method. The Facility Site Map is attached as Figure 1. The Facility Plot Plan is attached as Figure 2.

The facility consists of three work areas, The Main Building, the Mark 8 Building and a Warehouse. The facility operates 8,760 hours per year. The Main Building, depicted in Figure 3 contains 3 winding machines a pulling station, a cutting station and a chopper station. Small repairs or corrections are made using a hand held spray chopper machine. The Ware House is used for storage and packaging.

The Mark 8 Building depicted in Figure 4. The building contains two machines and a pulling station. The chopper will be moved to the area labeled Future Addition. Large ducts are manufactured in the Mark 8 Building.

Future plans include the installation of a Storage Tank and a grinder to recycle waste material and trimmed pieces.

Filament winding is the process of laying a band of resin impregnated fibers onto a rotating mandrel surface in a precise geometric pattern and curing them to form the product. This is an efficient method of producing cylindrical parts with optimum strength characteristics. Glass fiber is used for the filament, but other materials may be used, this filament is wetted and wound on the mandrel.

Spundstrand receives the various chemicals in 5 gallon cans or 50 gallon barrels.

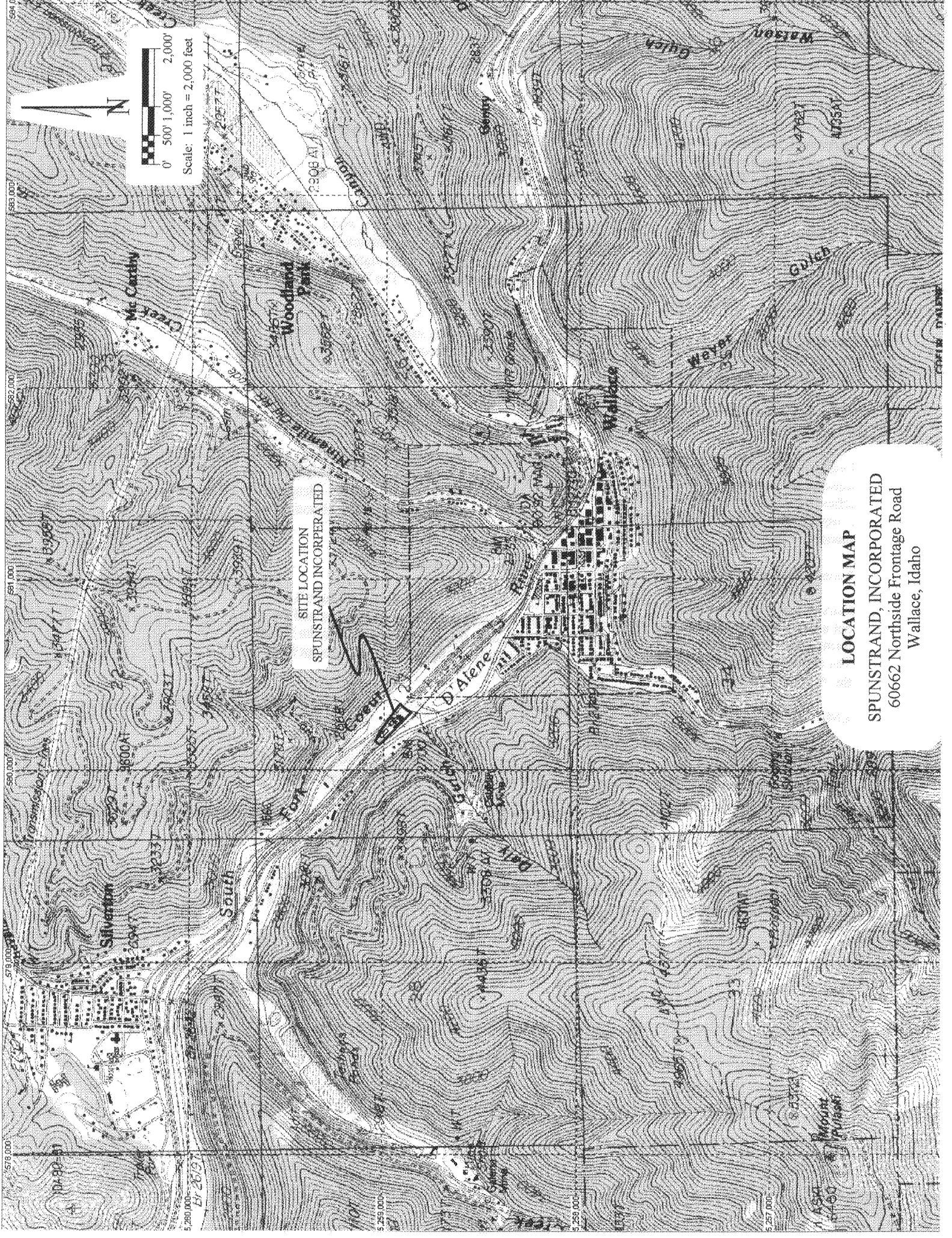
Section 1 of the Tier I Application Forms is included as Appendix A. Sections 2 through 8 are not included as Spunstrand does not have fuel burning equipment or process emissions and the forms do not apply. There are no Particulate, NOX, CO, SO2 or Lead emissions from the facility. The facility uses common natural gas fired heating and ventilating devices that are exempt from the Air Quality Rules.

EMISSIONS

Styrene emissions were calculated using the Unified Emission Factors for Open Molding of Composites published by the Composites Fabricators Associated, dated July 23, 2001 and anticipated purchased quantities of the necessary chemicals. Concentrations of Styrene were taken from the MSDS Sheets contained in Appendix A.

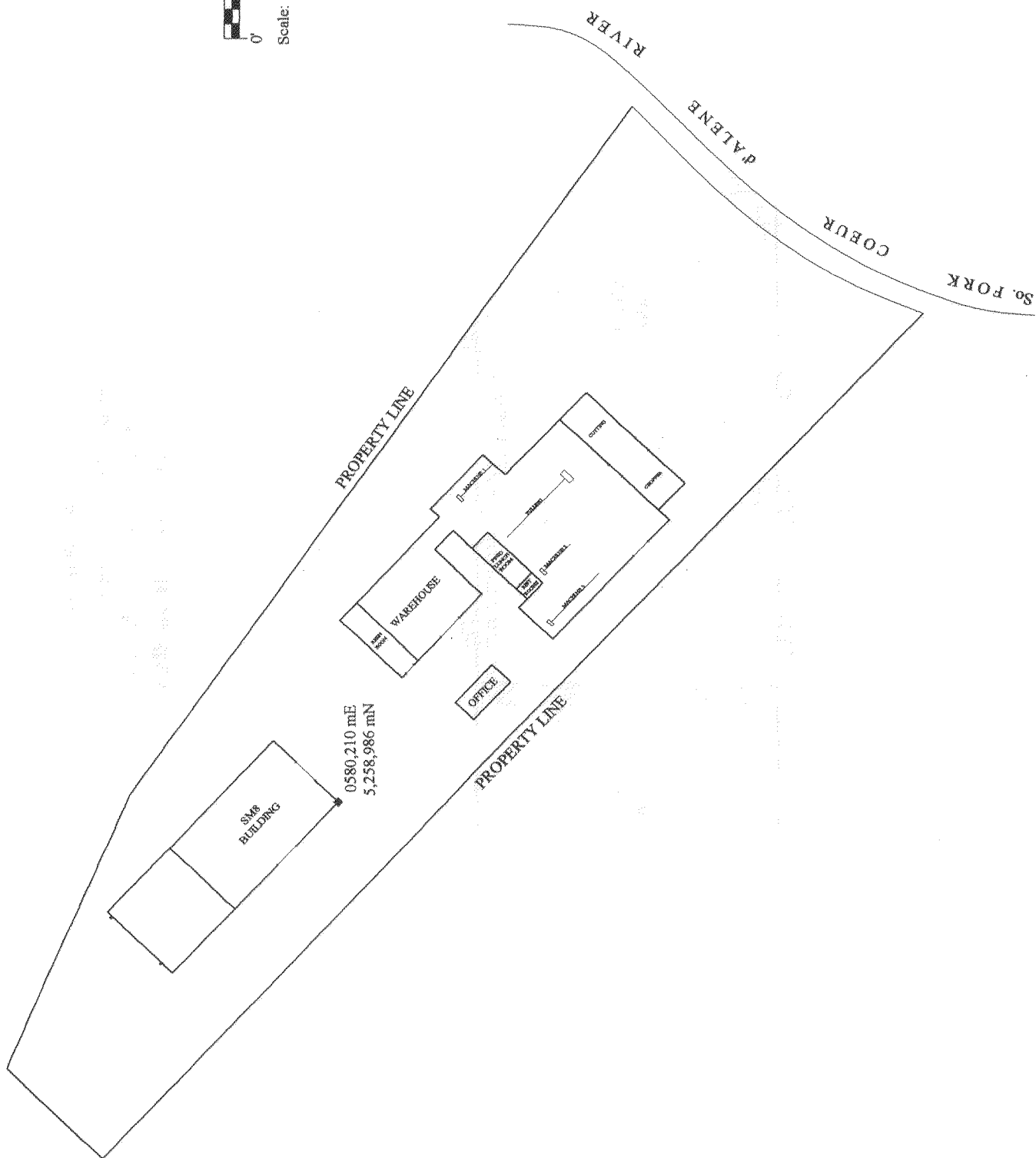
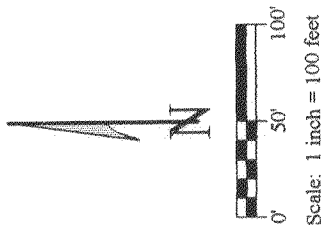
Results of the Emission Calculations are summarized in Table 1. The Emission Factor list is included as Table 2.

The Calculated Emissions are below the Styrene EL of 6.6 pounds per hour. Because the emissions are below the EL and there is not a NAAQS for VOC an Air Quality Model was not performed.

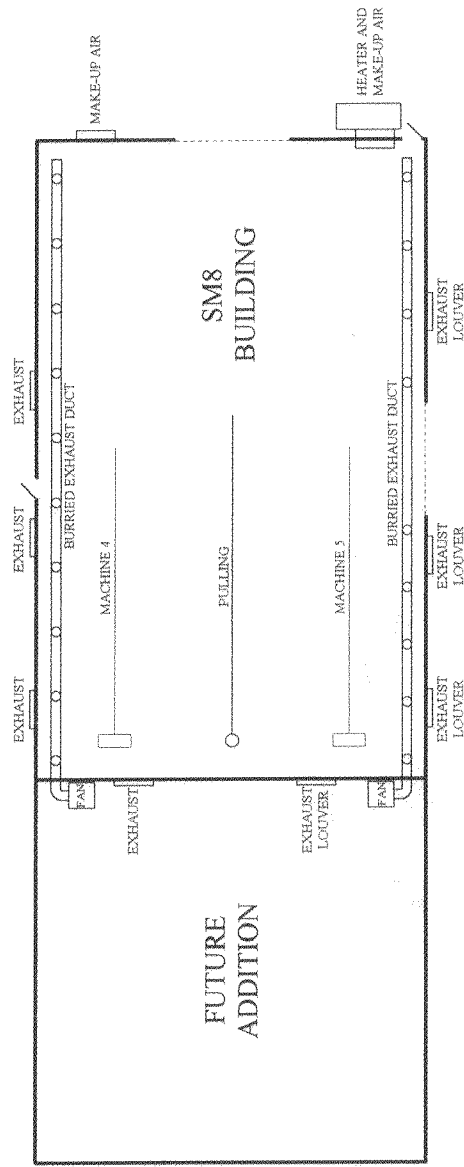
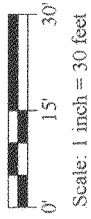


SITE LOCATION
SPUNSTRAND INCORPORATED

LOCATION MAP
SPUNSTRAND, INCORPORATED
60662 Northside Frontage Road
Wallace, Idaho



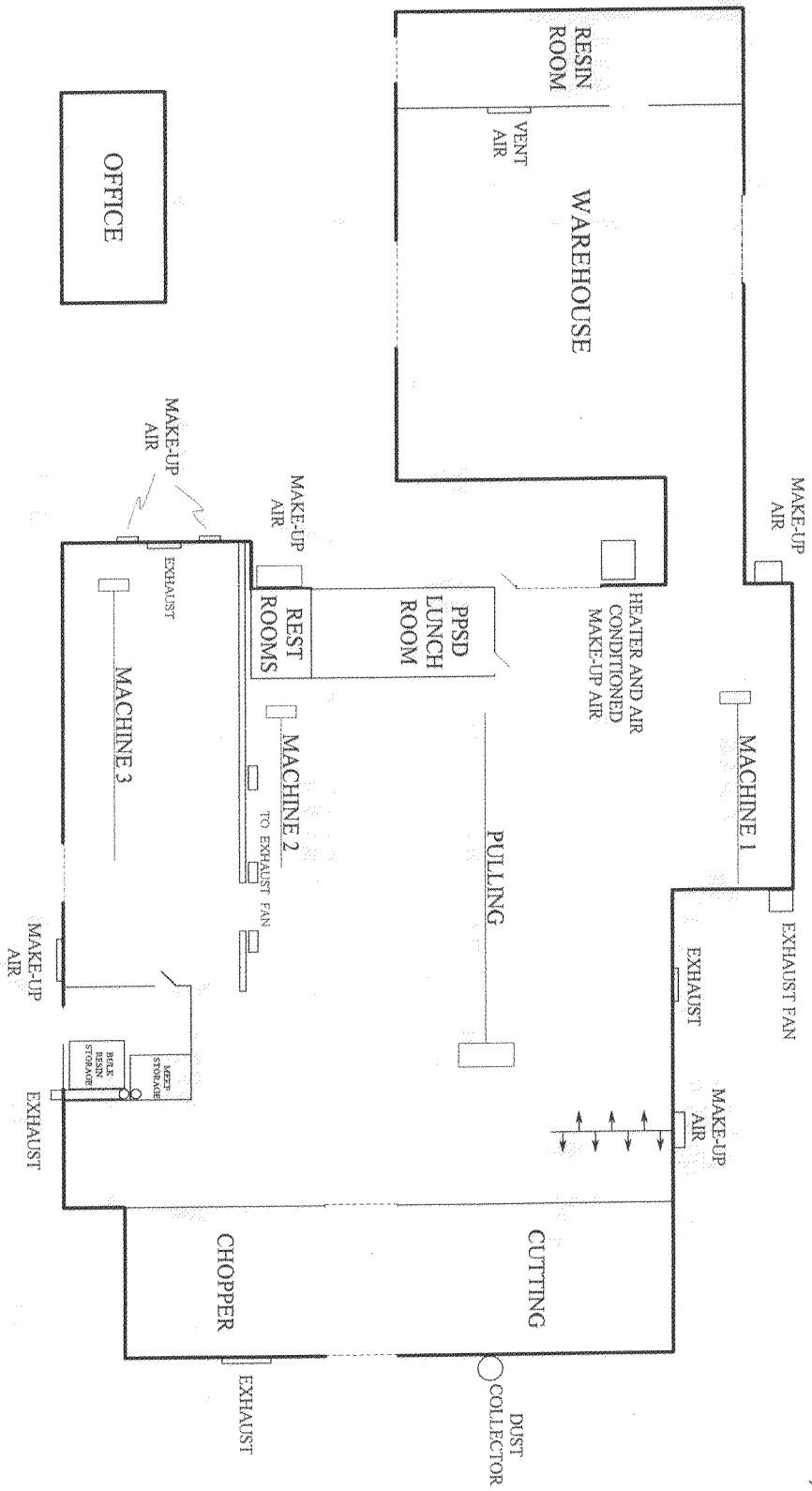
PLAN MAP
SPUNSTRAND, INCORPORATED
60662 Northside Frontage Road
Wallace, Idaho



SM8 BUILDING LAYOUT
SPUNSTRAND, INCORPORATED
60662 Northside Frontage Road
Wallace, Idaho

0' 15' 30'

Scale: 1 inch = 30 feet



BUILDING LAYOUT
 SPUNSTRAND, INCORPORATED
 60662 Northside Frontage Road
 Wallace, Idaho

TABLE 1
Spunstrand Styrene Emission Estimates
and Material List

			EL	ACC				
			lb/hr	mg/m ²				
Styrene			6.67	1				
Cobalt			0.0033					
Resorcinol			3					
Phenol			1.27					
Acetone			119					
Methyl Methacrylate (MMA)			27.3					

Resin	MSDS	2001 Quantity (lb)	% Styrene	lb Styrene	Emission Factor lb Styrene/ ton Resin	2001 Styrene Emissions (lb/yr)	Future Styrene Emissions (lb/yr)
0801 Styrene	N	800	100.0	800.00	489.6	195.84	332.928
AS197P Hetron Polyester 197P	Y	12,000	42.0	5040.00	171	1,026.00	1744.2
AS620T20 Hetron FR 620T20	Y	13,750	32.3	4441.25	118.864	817.19	1389.223
AS700 Ashland Hetron	Y	450	41.0	184.50	166	37.35	63.495
AS7334T15 Flex Iso	Y	15,500	41.0	6355.00	166	1,286.50	2187.05
AS922L Hetron FR 922L	Y	14,400	48.0	6912.00	204	1,468.80	2496.96
AS922L25 Hetron Vinyl Ester	Y	4,500	41.0	1845.00	166	373.50	634.95
AS99P Hetron ISO FR 99P	Y	29,150	36.0	10494.00	138	2,011.35	3419.295
ASFR620T20 FR Hetron Resin	Y	18,150	32.3	5862.45	118.864	1,078.69	1833.77436
ASFR992 Hetron VE 922	Y	51,000	41.0	20910.00	166	4,233.00	7196.1
ASQ6367 FR Hetron Resin 6367	Y	2,750	41.0	1127.50	166	228.25	388.025
ASQ6490 Terephthalic Lam Res	Y	126,520	44.6	56427.92	185.6	11,741.06	19959.7952
B-396P-IUU Roberts Gray Iso Gel	Y	142	28.0	39.76	103.04	7.32	12.436928
510-C-350M VE DX Derakane	Y	19,436	35.0	6802.60	133	1,292.49	2197.2398
FV 742-7695 Iso Resin	Y	45	41.9	18.86	170.5	3.84	6.521625
DX 745-4635 Iso Resin	Y	8,000	46.9	3752.00	198.4	793.60	1349.12
411-45 4852 DX Derakane	Y	904	45.0	406.80	188	84.98	144.4592
510A-40 DX Derakane	Y	8,619	37.5	3232.13	146.5	631.34	1073.280975
470-300M VE DX Derakane	Y	13,550	33.0	4471.50	122	826.55	1405.135
		316,466	42.5	139,123	177.8241	28,137.64	47833.98909
			43.96			14.07 tons/yr 3.21 lb/hr	23.92 tons/yr 5.46 lb/hr

				2001 Cobalt Emissions (lb/yr)*	Future Styrene Emissions (lb/yr)
1001 12PCT Cobalt Solution	?	111	% Cobalt 12	13.32	23.7096
FYCOBALT12 12 Octoate Cobalt	?	8	12	0.96	1.7088
AS197P Hetron Polyester 197P	Y	12,000	0.10	12.00	21.36
AS99P Hetron ISO FR 99P	Y	29,150	0.2	58.30	103.774
ASQ6490 Terephthalic Lam Res	Y	126,520	0.04	50.61	90.08224
				135.19	240.63484
				1.54E-02 lb/hr	2.75E-02 lb/hr

* Assumes all Cobalt emitted

				2001 Resorcinol Emissions (lb/yr)*	2001 Phenol Emissions (lb/yr)*	Future Styrene Emissions (lb/yr)
GPC DX GP 4211 Phenolic Resin	Y	10,000	% Resorcinol 17	1700.00	11	332.86
				1.94E-01 lb/hr	2.13E-02 lb/hr	3.80E-02 lb/hr

* Assumes all Resorcinol and Phenol emitted

				% MMA	Emission Factor lb MMA/ ton Gelcoat	2001 MMA Emissions (lb/yr)	Future Styrene Emissions (lb/yr)
B-396P-IUU Roberts Gray Iso Gel	N	142	5	7.10	75	5.325	9.4785
						6.08E-04 lb/hr	1.08E-03 lb/hr

0601 Acetone	N	357					
NOMEKP9H MEKP 9 CATALYST	N	4,832					
RXPVA10 PVA Barrier	N	23					
JEF DX R100 Epoxy Resin	Y	500	None				

Application Process

Provided by Composites Fabricators Association, dated July 23, 2001

Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed

[illegible]

Notes

- 1 Including styrene monomer content as supplied, plus any extra styrene monomer added by the molder, but before addition of other additives such as powders, fillers, glass, etc.
- 2 Formulas for materials with styrene content < 33% are based on the emission rate at 33% (constant emission factor expressed as percent of available styrene), and for styrene content > 50% on the emission rate based on the extrapolated factor equations; these are not based on test data but are believed to be conservative estimates. The value for "% styrene" in the formulas should be input as a fraction. For example, use the input value 0.30 for a resin with 30% styrene content by wt.
- 3 The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the *CFA Vapor Suppressant Effectiveness Test*.
- 4 SEE the *CFA Controlled Spray Handbook* for a detailed description of the controlled spray procedures.
- 5 The effect of vapor suppressants on emissions from filament winding operations is based on the *Dow Filament Winding Emissions Study*.
- 6 SEE the July 17, 2001 EECS report *Emission Factors for Non-Atomized Application of Gel Coats used in the Open Molding of Composites* for a detailed description of the non-atomized gel coat testing.
- 7 Use the equation $((0.4506 \times \% \text{ styrene}) - 0.0505) \times 2000$ for gel coats with styrene contents between 19% and 32% by wt.;
Use the equation $0.185 \times \% \text{ styrene} \times 2000$ for gel coats with less than 19% styrene content by wt.

Percentage Emission

1. Select Resin Styrene Content (% wt Styrene Monomer)
2. Select application method
3. Select Non-Vapor Suppressed or Vapor Suppressed
4. Find factor in table

Example:

Resin styrene content = 40%

Mechanical Atomized

Non-Vapor Suppressed

Emissions factor = 211 pounds styrene per 2,000 pounds resin/gel coat processed

Emissions Calculation

Resin wt. x Emissions Factor = Emissions wt.

Example:

1000 lbs. Resin x 211 pounds styrene/2,000 pounds resin/gel coat = 105.5
lbs. Emissions

A

APPENDIX A

IDEQ TIER I OPERATING PERMIT APPLICATION FORMS

SECTION 1

COMPANY & DIVISION NAME
 STREET ADDRESS OR P.O. BOX
 CITY
 STATE ZIP
 PERSON TO CONTACT
 TITLE
 PHONE NUMBER
 EXACT PLANT LOCATION
 GENERAL NATURE OF BUSINESS
 NUMBER OF FULL-TIME EMPLOYEES
 PROPERTY AREA (ACRES)

REASON FOR APPLICATION 1,5

- (1) Permit to Construct a new facility;
- (2) Permit to Modify an existing source;
- (3) Permit to Construct a new source at an existing facility;
- (4) Change of Owner or Location;
- (5) Tier I Permit to Operate;
- (6) Tier II Permit to Operate.

DISTANCE TO NEAREST STATE BORDER (MILES)

PRIMARY SIC

SECONDARY SIC

PLANT LOCATION COUNTY

ELEVATION (FT)

UTM ZONE

UTM (X) COORDINATE (KM)

UTM (Y) COORDINATE (K)

NAME OF FACILITIES

List all facilities within the state that are under your control, or under common control, and have emissions to the air. If none, so state

None	

OWNER OR RESPONSIBLE OFFICIAL

TITLE OF RESPONSIBLE OFFICIAL

Based on information and belief formed after reasonable inquiry, I certify the statements and information in this document are true, accurate, and complete.

SIGNATURE OF OWNER OR RESPONSIBLE OFFICIAL

DATE

Edgar H. Nelson

10 JAN 03

APPENDIX B
MSDS SHEETS

M A T E R I A L S A F E T Y D A T A S H E E T

COATINGS, RESINS, AND RELATED MATERIALS

MANUFACTURED BY:

McWhorter Technologies, Inc.
400 East Cottage Place
Carpentersville, IL. 60110

EMERGENCY CONTACT :CHEMTREC 1-800-424-9300
(OUTSIDE US/CANADA:CHEMTREC 703-527-3887)

INFORMATION CONTACT:1-888-CALL-MWT (DURING NORMAL BUSINESS HOURS)

DATE OF PREP: 12/01/99 SUPERSEDES DATE: 3/15/99 DATE OF PRINT: 1/14/00

SECTION I.

PRODUCT IDENTIFICATION

PRODUCT CODE:

745 4635 ~~ISO~~ RESIN

(INTERNAL REF.#162)

PRODUCT NAME :

UNSATURATED POLYESTER RESIN

SHIPPING DESCRIPTION:

RESIN SOLUTION,

3,

UN 1866, PG III

MARINE POLLUTANT, CONTAINS:
STYRENE

SECTION II.

HAZARDOUS INGREDIENTS

* WARNING * THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE
STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH
DEFECTS AND OTHER REPRODUCTIVE HARM.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HEALTH: 2 * FLAMMABILITY: 3

REACTIVITY: 1

INGREDIENT	WT.	TLV	SOURCE	IDLH	VAPOR	LEL
CAS NO.	PERCENT	ppm	mg/m3	ppm	PRESSURE	
					(mm Hg @68F)	
STYRENE						
100-42-5	46.9					
		20.0000	85.00	TWA/ACGIH	700	4.30
		100.0000		FEDERAL PEL		1.10
		40.0000	170.00	STEL/ACGIH		
		50.0000	215.00	NIOSH		

SECTION III.

PHYSICAL DATA

BOILING RANGE: 148-415 F PERCENT VOLATILE BY VOL: 55.21
SPECIFIC GRAVITY 1.068 EVAPORATION RATE (n-Bu Ac=1): 0.44
VAPOR DENSITY (AIR=1): 3.061 VAPOR PRESSURE (mm Hg@68F): 3.72
VOLATILE ORGANIC CONTENT (VOC): N/A
APPEARANCE AND ODOR: light straw colored solution - styrene odor
SOLUBILITY IN WATER: negligible

SECTION IV.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 86 DEG. F SETAFLASH OSHA CLASSIFICATION: IC
FLAMMABLE LIMITS % BY VOLUME IN AIR AT 212 DEG. F:

M A T E R I A L S A F E E T Y D A T A S H E E T
COATINGS, RESINS AND RELATED MATERIALS

MANUFACTURED BY:
McWhorter Technologies, Inc.
400 East Cottage Place
Carpentersville, IL, 60110

EMERGENCY CONTACT: CHEMTREC 1-800-424-9300

INFORMATION CONTACT: 1-888-CALL-MWT (DURING NORMAL BUSINESS HOURS)

DATE OF PREP: 3/15/99 SUPERSEDES DATE: 9/11/98 DATE OF PRINT: 8/25/99

SECTION I.

PRODUCT IDENTIFICATION

PRODUCT CODE:

742-7695

(INTERNAL REF.#162)

PRODUCT NAME:

UNSATURATED POLYESTER RESIN

SHIPPING DESCRIPTION:

RESIN SOLUTION,

3,

MARINE POLLUTANT. CONTAINS:
STYRENE

UN 1866,

PG III

SECTION II.

HAZARDOUS INGREDIENTS

* WARNING * THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE
STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH
DEFECTS AND OTHER REPRODUCTIVE HARM.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HEALTH: 2 * FLAMMABILITY: 3

REACTIVITY: 1

INGREDIENT	WT.	TLV	SOURCE	IDLH	VAPOR	LEL
CAS NO.	PERCENT	ppm	mg/m3	ppm	PRESSURE (mm Hg @68F)	
STYRENE						
100-42-5	41.9					
		20.0000	86.00			
		100.0000	425.00	TWA/ACGIH	700	4.30
		40.0000	170.00	FEDERAL PEL		1.10
				STEL/ACGIH		
ISOPROPYL ALCOHOL						
67-63-0	0.0160					
		400.0000	980.00	TWA/ACGIH	N/E	33.00
		400.0000	980.00	FEDERAL PEL		2.00
		500.0000	1225.00	STEL/ACGIH		

SECTION III.

PHYSICAL DATA

BOILING RANGE: 148-415 F PERCENT VOLATILE BY VOL: 52.11
SPECIFIC GRAVITY 1.128 EVAPORATION RATE (n-Bu Ac=1): 0.42
VAPOR DENSITY (AIR=1): 2.898 VAPOR PRESSURE (mm Hg@68F): 3.52
VOLATILE ORGANIC CONTENT (VOC): N/A
APPEARANCE AND ODOR: light straw colored solution - styrene odor
SOLUBILITY IN WATER: negligible

Georgia-Pacific

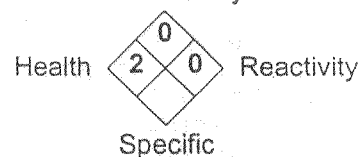


Georgia-Pacific Resins, Inc.

A wholly owned subsidiary of
Georgia-Pacific Corporation

NFPA Ratings

Flammability



Material Safety Data Sheet

GP® 4211 RESI-SET® Phenolic Molding Resin

Section 1. Chemical Product and Company Identification

Product / Trade Name GP® 4211 RESI-SET® Phenolic Molding Resin

Synonyms KRMS 4211; RRMS 4211

Chemical Family Phenol-Resorcinol-Formaldehyde Resin

Chemical Formula $(C_6H_6O_2 \cdot C_6H_6 \cdot CH_2O)_x$

Manufacturer Georgia-Pacific Resins, Inc.

2883 Miller Road
Decatur, GA 30035
(770) 593-6874 (Non-Emergency Phone)

Emergency Phone (24 hours): CHEMTREC 1-800-424-9300

Section 2. Composition and Information on Ingredients

Hazardous Components	CAS #	% by Weight	ACGIH TLV™	OSHA PEL
Resorcinol	108-46-3	17.0 max.	TWA: 10 ppm STEL: 20 ppm	Not established.
Phenol	108-95-2	11.0 max.	TWA: 5 ppm [skin]	TWA: 5 ppm [skin]
Formaldehyde	50-00-0	< 0.1	CEIL: 0.3 ppm	TWA: 0.75 ppm STEL: 2 ppm

[skin] This notation indicates that absorption through skin can contribute significantly to overall exposure.
TWAs are 8 hour exposures unless otherwise noted. STELs are 15 minute exposures unless otherwise noted.

Section 3. Hazards Identification

HMIS

Health Hazard	2
Fire Hazard	0
Reactivity	0
Personal Protection	0

Note: Personal protective equipment (PPE) is related to conditions of use. Determination of PPE is the responsibility of the employer. Refer to Section 8 (Exposure Controls / Personal Protection) of this MSDS for recommendations.

Emergency Overview Reddish-tan liquid; phenolic odor.

May be harmful if swallowed. Eye irritation or injury may result from exposure to this product.

MATERIAL SAFETY DATA SHEET

Ashland

Page 001
Date Prepared: 01/11/02
Date Printed: 01/29/02
MSDS No: 304.0164928-008.017

HETRON FR 992 RESIN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON FR 992 RESIN
General or Generic ID: VINYL ESTER

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
VINYL ESTER RESIN	Trade Secret	57.0- 61.0
STYRENE	100-42-5	41.0- 41.0
DIMETHYL METHYLPHOSPHONATE	756-79-6	0.3

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland

Page 001

Date Prepared: 02/11/02

Date Printed: 03/09/02

MSDS No: 304.0027083-011.010

HETRON 197 P

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON 197 P

Product Code: 566105

General or Generic ID: UNSATURATED POLYESTER RESIN

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYMER (S)	Trade Secret	55.0- 59.0
STYRENE	100-42-5	42.0- 42.0
COBALT COMPOUNDS		0.1- 0.1

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland

Page 001

Date Prepared: 09/28/01

Date Printed: 02/16/02

MSDS No: 304.0112139-011.002

HETRON 99 P

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON 99 P

Product Code: 563115

General or Generic ID: UNSATURATED POLYESTER RESIN

Company

Ashland

Ashland Distribution Co. &

Ashland Specialty Chemical Co.

P. O. Box 2219

Columbus, OH 43216

614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)

24 hours everyday

Regulatory Information Number:

1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYESTER RESIN	Trade Secret	58.0- 63.0
STYRENE	100-42-5	36.0- 36.0
DIMETHYL METHYLPHOSPHONATE	756-79-6	0.5- 0.9
COBALT COMPOUNDS		0.2- 0.2

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Continued on next page

MATERIAL SAFETY
DATA SHEET



ASHLAND CHEMICAL, INC.

Subsidiary Of Ashland Oil, Inc

P.O. BOX 2219

COLUMBUS, OHIO 43216

(614) 889-3333

24-HOUR
Emergency
Telephone

1 (800) 274-5263 c-

1 (800) ASHLAND

000387

HETRON 922 L

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: HETRON 922 L

PEABODY SPUNSTRAND INC
HIGHWAY 10 WEST
WALLACE ID 83873

S

03 56 041 6921700-SC1

Data Sheet No: 0176081-006
Prepared: 05/31/89
Supersedes: 12/22/88

PRODUCT: 566642
INVOICE: 418056
INVOICE DATE: 10/15/90
TO: PEABODY ABC INCORPORATED
P O BOX 77
WARSAW IN 46580

ATTN: PLANT MGR./SAFETY DIR.

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: EPOXY METHACRYLATE RESIN

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
STYRENE	48	50 PPM	50 PPM	(1)
CAS #: 100-42-5				

Notes:

(1) ACGIH /OSHA SHORT TERM EXPOSURE LIMIT (STEL) FOR STYRENE MONOMER IS 100 PPM. NIOSH RECOMMENDS A LIMIT OF 50 PPM, 8-HOUR TWA, 100 PPM 15 MINUTE CEILING.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION III - PHYSICAL DATA

Boiling Point	for COMPONENT(48%)	293.40 Deg F (145.22 Deg C) @ 760.00 mm Hg
Vapor Pressure	for COMPONENT(48%)	5.00 mm Hg (68.00 Deg F @ 20.00 Deg C)
Specific Vapor Density	AIR = 1	3.6
Specific Gravity		1.022 - 1.058 (77.00 Deg F @ 25.00 Deg C)
Percent Volatiles		45-50%
Evaporation Rate		SLOWER THAN ETHER
Appearance		CLEAR AMBER COLORED LIQUID
State		LIQUID
Form		HOMOG SOLN

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT 73.0 - 100.0 Deg F (22.8 - 37.8 Deg C)

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - 1.1% UPPER - 6.1%

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

POLYMERIZATION WILL TAKE PLACE UNDER FIRE CONDITIONS. IF POLYMERIZATION OCCURS IN A CLOSED CONTAINER, THERE IS A POSSIBILITY IT WILL RUPTURE VIOLENTLY. COOL STORAGE CONTAINER WITH WATER, IF EXPOSED TO FIRE.

NFPA CODES: HEALTH- 2 FLAMMABILITY- 3 REACTIVITY- 2

MATERIAL SAFETY DATA SHEET

Ashland

Page 001

Date Prepared: 07/02/02

Date Printed: 07/10/02

MSDS No: 304.0323243-003.001

HETRON FR 620 T 20 RESIN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON FR 620 T 20 RESIN

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:

1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYMER (S)	Trade Secret	64.0- 68.0
STYRENE	100-42-5	32.3
DIMETHYL METHYLPHOSPHONATE	756-79-6	0.8

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland

Page 001
Date Prepared: 02/23/02
Date Printed: 02/26/02
MSDS No: 999.0004213-006.001

COBALT 6% NAPHTHENATE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: COBALT 6% NAPHTHENATE
SAP Material No: 5900116 600 OLS
General or Generic ID: BLEND

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
NAPHTHENIC ACIDS, COBALT SALT	61789-51-3	53.0- 57.0
STODDARD SOLVENT	8052-41-3	43.0- 47.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, drying and cracking of skin, and skin burns. Additional symptoms of skin contact may include: allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects).

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful.

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), allergic reaction (causes narrowing of the air passages of the lungs, sweating, flushing, hives, rapid heart rate, and lowered blood pressure), and death.

Continued on next page



OMG AMERICAS, INC
811 SHARON DRIVE
WESTLAKE, OHIO 441

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 12% COBALT HEX-CEM
PRODUCT CODE: 00051

MANUFACTURING LOCATION:
OMG AMERICAS, INC
TWO MILE RUN ROAD
VENANGO COUNTY, FRANKLIN, PA 16323

DATE REVISED: 07/05/2000
DATE PRINTED: 07/05/2000

IN CASE OF EMERGENCY CONTACT:

8:00 a.m. to 5:00 p.m. (EST): 440-899-2950
After 5:00 p.m. (EST): 814-432-2125

CHEMICAL FAMILY/USE: Metal Carboxylate
CHEMICAL FORMULA: N

HMIS: HEALTH: 1*
FLAMMABILITY: 2
REACTIVITY: 0
PERSONAL PROTECTION: B

*Chronic health hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component/CAS	Percent	ACGIH TLV:	ACGIH Short Term Exposure Limit (STEL) value:	OSHA PEL:	OSHA Short Term Exposure Limit (STEL) value:	Units to the TWAs and STELs for ACGIH and OSHA are in: mg/m3
Cobalt 2-Ethylhexanoate 136-52-7	65	NE	NE	0.1+	NE	
Mineral Spirits 8052-41-3	35	100	NE	500*	NE	ppm

+For metal dust and fume, as Co

*The Manufacturer Recommended Exposure Limit for Mineral Spirits (8052-41-3) is 100 PPM.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Exposure to cobalt compounds may cause sensitization by inhalation and skin contact. Combustible liquid. All sources of ignition. May cause mild eye irritation. Aspiration hazard if swallowed. Can enter lungs and

Keep away from heat and cause damage. Keep

OMG Americas, Inc.

MATERIAL SAFETY DATA SHEET

Ashland

Page 001

Date Prepared: 08/10/99

Date Printed: 05/19/01

MSDS No: 304.0173783-007.011

AROPOL 7334 T 15

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: AROPOL 7334 T 15

Product Code: 569125

General or Generic ID: UNSATURATED POLYESTER RESIN

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYESTER RESIN	Trade Secret	52.0- 57.0
STYRENE	100-42-5	45.0
COBALT COMPOUNDS		0.2

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Continued on next page

MATERIAL SAFETY
DATA SHEET



ASHLAND CHEMICAL, INC.

Subsidiary Of Ashland Oil, Inc.

P.O. BOX 2219

COLUMBUS, OHIO 43216

(614) 889-3333

24-HOUR
Emergency
Telephone

1 (800) 274-5263 or
1 (800) ASHLAND

000387

HETRON 922 L

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: HETRON 922 L

PEABODY SPUNSTRAND INC
HIGHWAY 10 WEST
WALLACE ID 83873

S

03 50 041 6921700-S01

Data Sheet No: 0176081-C06
Prepared: 05/31/89
Supersedes: 12/22/88

PRODUCT: 566642
INVOICE: 418056
INVOICE DATE: 10/15/90
TO: PEABODY ABC INCORPORATED
P O BOX 77
WARSAW IN 46580

ATTN: PLANT MGR./SAFETY DIR.

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: EPOXY METHACRYLATE RESIN

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
STYRENE CAS #: 100-42-5	48	50 PPM	50 PPM	(1)

Notes:

(1) ACGIH /OSHA SHORT TERM EXPOSURE LIMIT (STEL) FOR STYRENE MONOMER IS 100 PPM. NIOSH RECOMMENDS A LIMIT OF 50 PPM, 8-HOUR TWA, 100 PPM 15 MINUTE CEILING.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION III - PHYSICAL DATA

Boiling Point	for COMPONENT(48%)	(293.40 Deg F 145.22 Deg C) @ 760.00 mm Hg
Vapor Pressure	for COMPONENT(48%)	@ 5.00 mm Hg 68.00 Deg F (20.00 Deg C)
Specific Vapor Density	AIR = 1	3.6
Specific Gravity		1.022 - 1.058 @ 77.00 Deg F (25.00 Deg C)
Percent Volatiles		45-50%
Evaporation Rate		SLOWER THAN ETHER
Appearance		CLEAR AMBER COLORED LIQUID
State		LIQUID
Form		HOMOG SOLN

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT 73.0 - 100.0 Deg F (22.8 - 37.8 Deg C)

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - 1.1% UPPER - 6.1%

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

POLYMERIZATION WILL TAKE PLACE UNDER FIRE CONDITIONS. IF POLYMERIZATION OCCURS IN A CLOSED CONTAINER, THERE IS A POSSIBILITY IT WILL RUPTURE VIOLENTLY. COOL STORAGE CONTAINER WITH WATER, IF EXPOSED TO FIRE.

MSHA CODES: HEALTH- 2 FLAMMABILITY- 3 REACTIVITY- 2

MATERIAL SAFETY DATA SHEET

Ashland

Page 001
Date Prepared: 02/01/99
Date Printed: 01/08/00
MSDS No: 304.0323278-003.001

HETRON Q 6367 ACC RESIN GP

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON Q 6367 ACC RESIN GP
Product Code: 2012019

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYESTER RESIN	Trade Secret	66.0- 71.0
STYRENE	100-42-5	31.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

MATERIAL SAFETY DATA SHEET

PRODUCT CODE.....PC-3123-G

MANUFACTURER;
PERFORMANCE COLORS LTD.
#1,12372 -82A AVENUE
SURREY B.C.
CANADA
V3W-0L6

PREPARATION DATE: 04-12-00
REVISION DATE :FEB. 27,2002
EMERGENCY PHONE #: 604-590-0804

SECTION 1 - GENERAL INFORMATION

CHEMICAL NAME & SYN....GELCOAT
TRADE NAME & SYN.....ROBERTS GREY
CHEMICAL FAMILY.....UNSATURATED POLYESTER RESIN
FORMULANOT APPLICABLE
TDG SHIPPING NAME.....RESIN SOLUTION
TDG CLASSIFICATION.....PIN:UN1866,(3.0),III

WHMIS CLASS.....B2, D2A , D2B

SECTION 2 -HAZARDOUS INGREDIENTS OR DISCLOSURE LIST

CHEMICAL IDENTITY	CAS	ACGIH TLV/OSHA PEL	%
STYRENE	100-42-5	50 ppm	33.2
SILICA, AMPHORUS, FUMED	7631-86-9	1.0 mg/m3	1.58
FERRIC OXIDE	1309-37-1		0.30

SECTION 3 - PHYSICAL DATA

PHYSICAL STATE.....LIQUID
BOILING POINT(F).....145 C (STYRENE)
SPECIFIC GRAVITY (H2O=1)...1.1-1.3
VAPOR PRESSURE(mmHg.).....4.9 mmHg @ 20 C (STYRENE)
PERCENT VOLATILE BY VOL...NOT TESTED
VAPOR DENSITY (AIR=1).....3.6
EVAPORATION RATE.....NOT AVAILABLE
SOLUBILITY IN WATER.....SLIGHT
PH.....NOT APPLICABLE
APPEARANCE & ODOR.....STYRENE ODOR, COLORED VISCOUS LIQUID

MATERIAL SAFETY DATA SHEET

Ashland

Page 002
Date Prepared: 07/10/02
Date Printed: 07/20/02
MSDS No: 304.0356864-002.001

AROPOL Q 6490 RESIN

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: metallic taste, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, loss of coordination, confusion, liver damage.

Target Organ Effects

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible kidney effects, effects on hearing, respiratory tract damage (nose, throat, and airways), testis damage, liver damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: mild effects on color vision, effects on hearing, respiratory tract damage (nose, throat, and airways), central nervous system effects.

Developmental Information

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

Cancer Information

Cobalt and certain cobalt compounds have been shown to cause cancer in laboratory animals. The relevance of this finding to humans is uncertain. Cobalt and certain cobalt compounds are listed as carcinogenic by the International Agency for Research on Cancer (IARC). In 1993, the International Agency for Research on Cancer (IARC) classified styrene in group 2B (possibly carcinogenic to humans). IARC concluded that there was no convincing evidence for carcinogenic action of styrene in animals based on the animal studies which existed at that time. Rather, the IARC 2B listing was based on data for styrene oxide, a metabolite of styrene. Two recent lifetime studies with styrene, one in rats and one in mice, have been completed since the 1993 review. There was no increase in cancer in styrene-exposed rats. However, there was an increase in lung cancer in styrene-exposed mice. The relevance of the mouse lung cancer to humans is uncertain. Styrene exposure has not been associated with an increased incidence of cancer in workers including those in the reinforced plastics and composites plastics industries.

Other Health Effects

Styrene readily reacts with low concentrations of halogens (for example, fluorine, chlorine, bromine, or iodine) to form a tear-producing substance.

Primary Route(s) of Entry

Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion.

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Continued on next page



The Dow Chemical Company
Midland, Michigan 48674

Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: DERAKANE* MOMENTUM* 470-300 EPOXY VINYL ESTER RESIN

Product Code: 71920

Effective Date: 03/08/02 Date Printed: 05/11/02 MSD: 000796

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Styrene monomer	CAS# 000-00-42-5	30-50%
Vinyl ester resin	CAS# 068610-47-9	BALANCE
	CAS# 036425-15-7	

*for specific percentage of styrene monomer found in this product, see section 15.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Straw-yellow viscous liquid. Pungent styrene odor. Flammable. *
* Reactive. Causes eye irritation. Highly toxic to fish and/or *
* other aquatic organisms. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause moderate eye irritation. May cause slight corneal injury. Vapors may irritate eyes. Vapors may cause lacrimation (tears).

SKIN: Prolonged or repeated exposure may cause skin irritation. Material may stick to skin causing irritation upon removal. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low. If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

(Continued on page 2 , over)

* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY



The Dow Chemical Company
Midland, Michigan 48674

Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: DERA-KANE* 510A-40 EPOXY VINYL ESTER RESIN

Product Code: 19648

Effective Date: 03/07/02 Date Printed: 03/29/02 MSD: 000426

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Brominated vinyl ester resin
Styrene monomer

CAS# 068140-84-1 62%
CAS# 000100-42-5 38%*

*For specific percentage of styrene monomer found in this product,
see Section 15.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Amber liquid. Pungent styrene odor. Flammable. Reactive. *
* Highly toxic to fish and/or other aquatic organisms. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight irritation with corneal injury. Vapors
may irritate eyes. Vapors may cause lacrimation (tears).

SKIN: Prolonged contact is essentially non-irritating to skin.
Material may stick to skin causing irritation upon removal.
A single prolonged exposure is not likely to result in the
material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low.
If aspirated (liquid enters the lung), may be rapidly absorbed
through the lungs and result in injury to other body systems.
Small amounts swallowed incidental to normal handling operations
are not likely to cause injury; swallowing amounts larger than
that may cause injury.

(Continued on page 2, over)

* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY



The Dow Chemical Company
Midland, Michigan 48674

Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: DERAKANE* MOMENTUM* 510C-350 EPOXY VINYL ESTER RESIN

Product Code: 71921

Effective Date: 05/15/01 Date Printed: 02/06/02 MSD: 001601

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Brominated vinyl ester resin	CAS# 068140-84-1	60-70%
Styrene monomer	CAS# 000100-42-5	30-40%*

*For specific percentage of styrene monomer found in this product, see Section 15.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Amber liquid. Pungent styrene odor. Flammable. Reactive. Highly *
* toxic fish and/or other aquatic organisms. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight irritation with corneal injury. Vapors may irritate eyes. Vapors may cause lacrimation (tears).

SKIN: Prolonged contact is essentially non-irritating to skin. Material may stick to skin causing irritation upon removal. A single prolonged skin exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

(Continued on page 2 , over)

* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY



The Dow Chemical Company
Midland, Michigan 48674

Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: DERAKANE* MOMENTUM* 510C-350 EPOXY VINYL ESTER RESIN

Product Code: 71921

Effective Date: 05/15/01

Date Printed: 02/06/02

MSD: 001601

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Brominated vinyl ester resin	CAS# 068140-84-1	60-70%
Styrene monomer	CAS# 000100-42-5	30-40%*

*For specific percentage of styrene monomer found in this product, see Section 15.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Amber liquid. Pungent styrene odor. Flammable. Reactive. Highly *
* toxic fish and/or other aquatic organisms. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight irritation with corneal injury. Vapors may irritate eyes. Vapors may cause lacrimation (tears).

SKIN: Prolonged contact is essentially non-irritating to skin. Material may stick to skin causing irritation upon removal. A single prolonged skin exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

(Continued on page 2 , over)

* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-HOUR EMERGENCY PHONE NUMBER: 517-636-4400

Product: DERAKANE* 411-45 EPOXY VINYL ESTER RESIN

Product Code: 19633

Effective Date: 02/24/99 Date Printed: 07/13/99 MSD: 000660

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Styrene monomer	CAS# 000100-42-5	30-60%*
Vinyl ester resin	CAS# 036425-16-8	BAL.

*For specific percentage of styrene monomer found in this product,
see section 15.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Straw-yellow viscous liquid. Pungent styrene odor. Flammable. *
* Reactive. Causes eye irritation. Highly toxic to fish and/or *
* other aquatic organisms. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause moderate irritation with corneal injury. Vapors
may irritate eyes. Vapors may cause lachrymation (tears).

SKIN: Prolonged or repeated exposure may cause skin irritation.
Material may stick to skin causing irritation upon removal. A
single prolonged exposure is not likely to result in the
material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low.
If aspirated (liquid enters the lung), may be rapidly absorbed
through the lungs and result in injury to other body systems.

INHALATION: Excessive vapor concentrations are attainable and
could be hazardous on single exposure. Signs and symptoms of
excessive exposure may be anesthetic or narcotic effects.

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